

Atty. Dkt. No. 032931-0256

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1-43 (canceled)

Claim 44. (currently amended): An isolated nucleic acid molecule which encodes the polypeptide SEQ ID NO:2.

Claim 45. (currently amended): An isolated nucleic acid molecule comprising the nucleic acid sequence SEQ ID No: 1.

Claim 46. (previously presented): An isolated nucleic acid molecule which is anti-sense to the nucleic acid molecule of claim 44.

Claim 47. (currently amended): An isolated nucleic acid molecule which encodes a fusion protein, said fusion protein comprising ~~[[a]]~~ the polypeptide encoded by the nucleic acid molecule of claim 44 and a second polypeptide.

Claim 48. (previously presented): The nucleic acid molecule of claim 47 wherein the second polypeptide is a heterologous signal peptide.

Claim 49. (previously presented): The nucleic acid molecule of claim 47 wherein the second polypeptide has adjuvant activity.

Claim 50. (previously presented): The nucleic acid molecule of claim 44, operably linked to one or more expression control sequences.

Claim 51. (currently amended): A vaccine vector comprising the a-polypeptide-encoding nucleic acid sequence selected from any one of:

(i) SEQ ID No: 1; ~~and-or~~

(ii) a nucleic acid sequence which encodes the polypeptide of SEQ ID NO:2;

wherein the nucleic acid sequence is capable of being expressed.

Atty. Dkt. No. 032931-0256

Claim 52. (currently amended): **A The vaccine vector of claim 51 comprising a hybrid gene, wherein the hybrid gene encodes a fusion polypeptide, wherein the fusion polypeptide comprises the polypeptide of nucleic acid encoding a fusion protein, wherein the fusion protein comprises:**

**(a) a first polypeptide whose sequence is set forth in SEQ ID No: 2; and**

**(b) a second heterologous polypeptide;**

wherein the hybrid gene nucleic acid encoding the fusion protein is capable of being expressed.

Claim 53. (previously presented): The vaccine vector of claim 52 wherein the second polypeptide is a heterologous signal peptide.

Claim 54. (previously presented): The vaccine vector of claim 52 wherein the second polypeptide has adjuvant activity.

Claim 55. (previously presented): The vaccine vector of claim 51 wherein the nucleic acid is operably linked to one or more expression control sequences.

Claim 56. (previously presented): The vaccine vector of claim 51 wherein the polypeptide-encoding nucleic acid is the first nucleic acid, and wherein the vaccine vector further comprises a second nucleic acid encoding an additional polypeptide which enhances the immune response to the polypeptide expressed by said first nucleic acid.

Claim 57. (previously presented): The vaccine vector of claim 56 wherein the additional polypeptide is a *Chlamydia* polypeptide.

Claim 58. (previously presented): A pharmaceutical composition comprising the nucleic acid according to claim 44 and a pharmaceutically acceptable carrier.

Claim 59. (currently amended): A pharmaceutical composition comprising a pharmaceutically acceptable carrier or diluent ~~suitable for use in a vaccine~~, and a nucleic acid molecule which encodes the polypeptide of SEQ ID NO:2; wherein the nucleic acid is capable of being expressed.

Atty. Dkt. No. 032931-0256

Claim 60. (previously presented): A unicellular host transformed with the nucleic acid molecule of claim 50.

Claims 61 and 62. (canceled).

Claims 63-78 (canceled)

Claim 79. (currently amended): A method for preventing or treating *Chlamydia pneumoniae* infection comprising administering to a patient an effective amount of:

- (a) the nucleic acid according to claim 44;
- (b) a vaccine vector wherein the vaccine vector comprises the nucleic acid according to claim 44;
- (c) a pharmaceutical composition comprising the nucleic acid according to claim 44 and a pharmaceutically acceptable carrier; or
- (d) **[[a]] the** polypeptide encoded by the nucleic acid according to claim 44 in the reading frame set forth in SEQ ID NO:2.

Claims 80-82 (canceled)

Claim 83. (previously presented): The vaccine vector according to claim 51 wherein the vaccine vector is expression plasmid pCAI764 as shown in Figure 3.

Claims 84-85 (canceled)

Claim 86 and 87. (canceled)

Claims 88-93 (canceled)